

## SOME CHARACTERISTICS OF THE HUNGARIAN AGRICULTURE IN THE 1990s\*

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Due to the natural conditions agriculture played a definitive role in the Hungarian economy in the past and even today. The share of agriculture in the GDP is 3.7 percent, and agricultural land area is 63 percent of the total. According to the General Agricultural Census 2000 almost 1 million units were engaged in any kind of agricultural activity.

The agricultural sector experienced dynamic growth during a few short periods in the second part of the past century, as the measures introduced in 1945, 1961 and 1990 resulted in structural changes which then completely reshaped the production conditions prevailing during the preceding years, through the introduction of new agricultural policies and changes in land ownership. In the 1990s production was below the level of the period between 1989–1990. In the study the authors analyse the sectoral characteristics of the changes in agricultural production by type of holdings.

Keywords: Agricultural production; Agricultural transformation.

The performance of agriculture is dependent on very complex natural, economic and social impacts, affecting agricultural production. Such complex factors can reinforce each other, which means that unfavourable conditions, may strengthen further the negative effects. We cannot discount the fact that agriculture is a business of live organisations, and factors such as the weather, have an extreme impact on production results. Consequently, the uncertainties of production may still be present, even if not to the same extent as before. In addition, the production is heavily influenced by factors such as the quality and position of the cultivated land, the materials used, the quantity and quality of equipment used, the labour and market conditions. These factors have a complex impact on the optimal production structure.

In global terms, agricultural production increases by approximately annual two percent which is more or less in line with population increase. In areas outside Europe the growth is faster. Production figures in Europe are more or less stagnating. In the 1990s, the average European annual level was one to three points lower than in preceding periods.

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At the end of the XX<sup>th</sup> century, in the economically developed European countries the somewhat increasing volume of agricultural products was yielded in an ever decreasing agricultural area, using increasingly less labour and more equipment and materials. The relatively similar tendencies have affected the agriculture of the countries of the European Union in a same manner, and have resulted in slow restructuring and increase in quality.

In Hungary, the agricultural sector experienced dynamic growth only during a few short periods in the last half century, as the measures introduced in 1945, 1961 and 1990 resulted in structural changes completely reshaped the production conditions prevailing during the preceding years, through the introduction of new agricultural policies and changes in land ownership. Following the establishment of co-operatives in the 1950s, production ceased to improve for a considerable period, while after 1956 a lot of the co-operatives were liquidated. Consequently, for 50 years, agricultural production volumes went through alternating periods of growth and stagnation.

The performance of the Hungarian agriculture has been significantly lagging behind the European average. In the 1990s production was 20-30 percent below the level of the period between 1989 and 1991 (see Table 1). Such underperformance was not justified. With sensible economic and market measures, the transition could have been made more seamless, at least a drop of this magnitude could have been avoided.

Table 1

*Agricultural production volumes, 1989–2000*  
(Index: 1990=100.0)

Year	World	Europe	Hungary
1989	.	.	105.0
1990	100.0	100.0	100.0
1991	101.2	99.9	93.8
1992	103.5	97.8	75.0
1993	104.1	96.0	67.7
1994	107.1	93.7	69.8
1995	109.3	94.4	71.6
1996	113.7	98.0	76.1
1997	116.5	98.3	73.6
1998	118.2	98.5	74.1
1999	121.2	99.8	74.4
2000	122.9	99.1	69.6

Source: FAO database.

For centuries, Hungarian agriculture has been characterised by a lack of capital. Due to the slow return of investment, the industrial capital has only shown limited interest towards agriculture. During the last 50 years, there was only one period, between 1960 and 1970, when Hungarian agriculture enjoyed subsidies that resulted in considerable increase in the volume of agricultural production. Consequently, Hungarian agricultural production achieved the standards of Western European countries with developed agricultural industry. Since then, after a period of stagnation, the agricultural output has dropped.

The latest changes that started in 1990 have still not levelled out, and no long-term solutions have been found, even though the expected requirements related to the accession to the European Union have become increasingly known, inquiring further, unavoidable structural changes.

### 1. AGRICULTURAL PRODUCTION AND THE MAIN FEATURES OF STRUCTURAL CHANGES BETWEEN 1989 AND 2001

The political and economic transition of the 1990s manifested within the agricultural industry in a gradual, and multi-stage manner. The return of land ownership to the original owners or to new candidates has not happened without problems, and could not be fully accomplished.

At the same time, the liquidation of co-operatives and state farms has resulted in a considerable loss of assets. Even the previous level could not be maintained. Many of the resulting, mainly small farms could only perform at low standards, due to the lack of suitable tools and equipment. In the lack of a thoroughly assessed agricultural policy, following the loss of eastern markets, both production volumes and agricultural exports have dropped.

In Hungary, agricultural production practically stopped growing in the late 1980s. This was followed by a dramatic drop in the 1990s.

The gross value of agricultural production dropped during the 1990s, and it was approximately 20 to 40 percent under the level of the 1980s (see Table 2).

Table 2

*Volume indices of gross agricultural production, 1989–2001*  
(Index: 1990=100.0)

Year	Crop production and horticultural products	Live animals and animal products	Total
1989	110.2	100.2	105.0
1990	100.0	100.0	100.0
1991	102.5	84.4	93.8
1992	76.1	73.8	75.0
1993	69.1	66.1	67.7
1994	75.9	63.3	69.8
1995	77.3	65.5	71.6
1996	84.9	66.6	76.1
1997	84.0	62.6	73.6
1998	80.9	66.5	74.1
1999	82.8	65.4	74.4
2000	70.9	67.9	69.6
2001	93.7	66.9	80.6

The domestic drop was smaller for crop production (10-30%) than for animal husbandry, which only managed to reach two thirds, or less of the level of 1990. The performance of crop production has fluctuated considerably, while the level of animal husbandry has consistently remained at a low level since 1993.

The volume indices of intermediate consumption considerably fell behind the previous figures; in most years significantly less funds were used in agricultural production than in previous periods (see Table 3).

Table 3

*Volume indices of intermediate consumption*  
(Index: 1990 = 100.0)

Year	Total	Of which:		Agricultural output without intra-agricultural use
		agricultural origin	industrial origin	
1989	112.2	114.7	110.9	102.9
1990	100.0	100.0	100.0	100.0
1991	86.7	86.3	97.1	95.8
1992	67.1	59.4	78.8	79.3
1993	63.9	50.4	77.9	72.4
1994	67.2	63.1	77.0	71.7
1995	68.0	63.6	78.1	73.8
1996	69.4	66.0	78.6	78.9
1997	66.0	65.9	72.8	75.7
1998	65.1	55.3	77.9	79.2
1999	67.7	56.0	81.6	79.4
2000	67.7	47.4	87.4	75.6
2001	75.6	53.8	97.0	87.9

In ten years, the prices of industrial products used in agriculture have increased (see Figure 4). Although the comparative ratio of agricultural prices versus industrial prices did not change significantly; agricultural prices were already lagging behind the average price growth of industrial products used in agriculture (see Figure 1). The only year this trend did not prevail was 2000, when the ratio between prices of agricultural and industrial products did not increase. Since 1990, this ratio has been increasing every single year.

The high inflation prevailing during the 1990s had also affected the agricultural production. Between 1990 and 2001 the producers' price level of agricultural products has increased fourfold, while that of goods and services used for agricultural production has grown sixfold. The disadvantageous relative movements of output and input prices resulted in a decrease of nearly one-third in the income level of agricultural producers. The change in terms of trade was not gradual: in 1992, 1994, 1995 and 2000 the producers' prices grew faster than input prices. This negative tendency accelerated in the second half of the 1990's.

A smaller increase in price levels was recorded in 2001. The price level of vegetables, fruits grew above the average, while that of live animals (especially cattle), cereals and pulses grew below the average during the period under review. Among products used for agricultural input the price increase of seeds and energy (mainly diesel oil) was outstandingly high. The price level of feeding stuff of industrial origin amounting to 40 percent of the purchases of producers grew below the average due to decreasing demand as a result of the drop in the number of animals.

Figure 1. Agricultural terms of trade  
(Index: 1990=100.0)

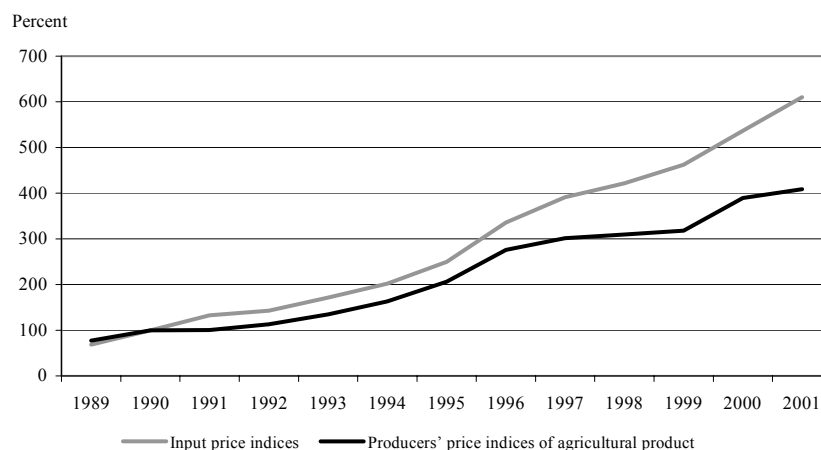


Table 4

Components of agricultural terms of trade  
(Index: 1990=100.0)

Year	Price index of			Agricultural producers' price index	Terms of trade
	Agricultural inputs	Plant cultivation and horticulture	Animal husbandry		
1991	132.6	98.2	102.8	100.4	75.7
1992	143.2	105.9	122.2	113.2	79.1
1993	171.8	134.4	135.9	135.1	78.6
1994	202.1	152.3	176.4	163.1	80.7
1995	250.0	200.5	213.7	206.4	82.6
1996	335.8	290.7	255.9	276.0	82.2
1997	391.1	290.2	315.5	301.4	77.1
1998	422.0	280.0	348.8	309.9	73.4
1999	462.1	306.2	332.5	317.9	68.8
2000	536.5	400.5	373.8	389.3	72.6
2001	610.6	378.5	447.4	408.7	66.9

In Hungarian agriculture the share of active earners decreased from over 50 percent to under 10 percent during the XX<sup>th</sup> century. In the more industrialised countries, this phenomenon had already begun in the first half of the XX<sup>th</sup> century. In the last 30 years, the number of agricultural labour force dropped by half in Europe (in the EU 15 member states the drop has been even more dramatic; the ratio, already low previously, has decreased to below 5 percent). In the 1990s, only the Czech Republic had a lower ratio of agricultural earners in the Central European region than Hungary, while within the EU member states Spain, Italy, Portugal and Greece had higher and Finland had equal in 1995. However Poland and Hungary plays a leading role compared to other Central and Eastern European countries in terms of the size of cultivated land and agricultural pro-

duction. The mentioned countries import more agricultural products than export; while Hungarian agricultural foreign trade balance has been consistently and significantly positive since long.

The reason for the decrease experienced in the last 10 years was the cessation of part-time employment in the former co-operatives. With the liquidation of large-scale agricultural companies lots of people lost their living, and older workers typically chose retirement. A high proportion of the available labour force could not find alternative employment, especially in smaller settlements. Those, who upon liquidation of the large-scale agricultural companies, chose to make a start in small-scale, family-based farming, did not employ extra people, and many of them worked only within the family farms part-time. Their number are reflected amongst those in full-time employment (see Table 5.).

Table 5

*The number and proportion of employed labour force, 1989–2001*

Year	Number of employees in national economy (thousands)	Of which employed			
		in agriculture, game farming and forestry		in the food industry	
		thousands	percent	thousands	percent
1989	.	.	.	.	.
1990	4 880	693	14.2	234	4.8
1991	4 520	538	11.9	231	5.1
1992	4 083	460	11.3	210	5.1
1993	3 827	349	9.1	197	5.2
1994	3 752	328	8.7	180	4.8
1995	3 679	295	8.0	157	4.3
1996	3 648	302	8.3	165	4.5
1997	3 646	288	7.9	160	4.4
1998	3 698	279	7.5	159	4.3
1999	3 812	270	7.1	155	4.1
2000	3 849	252	6.5	152	4.0
2001	3 860	239	6.2	156	4.0

The net worth realised in the Hungarian agricultural industry considerably falls behind the average level of most EU countries, and this is the basic reason for lower yields.

## 2. SECTORAL CHARACTERISTICS OF THE CHANGES IN AGRICULTURAL PRODUCTION

Among the European countries it is only in Denmark and Hungary where the proportion of arable land exceeds or nears 50 percent of the total area of the country. In terms of production, these two countries are outstanding as the majority of their agricultural produce is exported i.e. both countries are net exporters of agricultural products. However, in the last decade, Hungary fell behind in this race, and no future solution has been outlined to remedy this situation.

The area of arable land and land used for the key land use categories, apart from orchards, has been gradually declining since 1990. However, the figures of individual years do not provide an objective picture of the changes that have taken place, as they do not reflect the frequent changes in ownership, and the state land registration could not properly track the changes in cultivation types either.

The orchard and vineyard census carried out in 2001 has reassuringly clarified the actual area used for these two cultivation areas, using the latest technical tools available. However, other cultivation areas still require further clarification. It is quite probable that there are pieces of land, totalling several hundreds of thousands of hectares that are not cultivated any longer due to their poor quality and because of the low revenues that can be achieved.

It is not worth keeping arable land that has not been used for sufficiently profitable cultivation as a meadow. It would be more justified to plant forests on or utilise them in an alternative way. The situation is very similar with grapes; family vineyards, typically planted with older grape varieties require modernisation due to their age and neglected state.

There has not been a considerable fluctuation in the area of orchards for the last decade, although only the area changes of orchards can be taken satisfactory. In the last decade, grassland has reduced by over 10 percent, and the grass yields of these areas have frequently remained unutilised (see Table 6).

Table 6

*Agricultural area by land use categories, 1989–2001\**  
(1000 hectares)

Year	Arable land, garden	Vineyard	Orchard	Grassland	Agricultural area
1989	5 052	140	95	1 197	6 884
1990	5 054	138	95	1 186	6 473
1991	5 056	137	94	1 173	6 460
1992	4 742	135	95	1 164	6 136
1993	4 747	132	93	1 157	6 129
1994	4 749	132	93	1 148	6 122
1995	4 806	131	94	1 148	6 179
1996	4 811	131	94	1 148	6 185
1997	4 820	131	96	1 148	6 195
1998	4 819	130	96	1 148	6 193
1999	4 816	127	96	1 147	6 186
2000	4 601	106	95	1 051	5 854
2001	4 614	93	97	1 061	5 865

\* In certain years the criteria of cultivation sector classification were modified.

The decline in the more valuable cultivation sectors has resulted in an increase in the area of forests, and land removed from cultivation (either used for construction or for other non-agricultural purposes). In the period studied the area of forests has increased by nearly five percent, while the area of uncultivated land grew by nearly 50 percent (see Table 7).

Table 7

*Changes in the regularly uncultivated areas*  
(1000 hectares)

Year	Forest	Reeds	Fish-pond	Uncultivated land
1989	1 688	40	27	1 064
1990	1 695	40	27	1 068
1991	1 701	40	26	1 076
1995	1 763	41	27	1 293
2000	1 770	60	32	1 588
2001	1 772	60	32	1 574

The share of the individual cultivation sectors within the total agricultural production is traditionally in line with the distribution of the usage of arable land; however, this aspect has been losing its dominance for the last few years (see Table 8).

Table 8

*Changes in the utilized agricultural area by legal forms, 1989–2001*  
(1000 hectares)

Year	Companies and agricultural enterprises	Co-operatives	Private farmers	Total
	arable land on 31 May			
1989	2 148	5 113	979	8 240
1990	2 146	4 938	1 152	8 236
1991	2 325	4 589	1 314	8 228
1992	2 820	4 031	1 072	7 923
1993	2 481	3 733	1 747	7 961
1994	2 396	2 570	3 080	8 046
1995	2 269	2 084	3 658	8 011
1996	2 294	1 900	3 823	8 017
1997	2 094	1 730	4 212	8 036
1998	2 129	1 585	4 323	8 036
1999	2 319	1 413	4 304	8 035
2000	2 480	1 120	3 704	7 716*
2001	2 592	815	3 965	7 730**

\* Of which 412 thousand hectares removed from agricultural cultivation.

\*\* Of which 357 thousand hectares removed from agricultural cultivation.

The land of former large agricultural co-operatives was mainly distributed among individual farmers. However, the transformation, when changes in ownership took place was not entirely transparent, the areas newly received often went through several stages of transformation.

The distributed land was not always cultivated, due to a lack of either appropriate tools or necessary labour. Many poor quality pieces of land were not even worthy of cultivation, and this was often realised only after shorter or longer periods of unsuccessful attempts. Certain non-agricultural enterprises also obtained land; consequently, such



pieces of land were removed from agricultural control. There was also a tendency for regular changes in land ownership.

The total volume of land belonging to companies and enterprises has hardly transformed, even though lots of changes have taken place in terms of the various farming styles. The greatest decline has occurred in terms of co-operatives. In 2001, the total area of their arable land was only slightly over 15 percent of that in 1989. Their decline was gradual, and the decrease in their arable land has mainly benefited individual farms. The changes that have taken place in various directions and on different scales, have resulted a shift in the number of land-owning farms and in the distribution of land.

The number of the smallest and the largest farms, as well as the size of the arable land belonging to them have decreased, to benefit medium-size farms. Despite of this, medium-sized farms still do not represent the weight they should. In parallel, the number of individual farms has gradually decreased: in 1981, as much as 1531 thousand farms participated in agricultural production, while this figure was 1398 thousand in 1991 and 967 thousand in 2000. In 2000, the average accumulated size of small and large holdings was 6.5 hectares, despite of the fact that nearly 90 percent of landowners still owned less than five hectares (see Table 9).

Table 9

*Distribution of the number of farms and their utilized agricultural area  
by the size of land, 1981, 1991, 2000  
(percent)*

Size (hectares)	Distribution of the					
	number of farms			arable land		
	1981	1991	2000	1981	1991	2000
– 1	93.0	81.4	70.3	7.2	5.0	2.8
1.1 – 5	6.7	12.5	19.1	4.8	5.5	6.5
5.1 – 10	0.1	4.3	4.6	0.1	4.2	4.9
10.1 – 50	0.1	1.6	4.8	0.1	5.0	15.2
50.1 – 100	0.0	0.2	0.6	0.1	3.1	5.9
100.1 – 500	0.0	0.1	0.5	0.3	5.2	12.1
500.1 – 1000	0.0	0.0	0.1	0.3	4.0	6.0
1000.1 –	0.1	0.0	0.1	87.1	68.0	46.6
<i>Total</i>	<i>100.0</i>	<i>100.1</i>	<i>100.1</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

The change of ownership has taken place differently in the various land use categories. The process described is best represented by the changes in the area of arable land. It also should be considered however that the area of arable land shown in the various surveys decreased by over 10 percent in 12 years.

In crop production cultivation of the land, and, within that, the growing of grain crops, remained the key cultivation sector in the last decade.

The land sowing structure has changed unfavourably. The sowing area of grain crops has increased, while the share of other crop types has dropped, despite a continuous decrease in the total area of land (see Table 10).

Table 10

*Structure of sown area on arable land, 1989–2001\**  
(percent)

Year	Cereals	Potato and pulses	Industrial crops	Rough and succulent fodders	Vegetables	Other crops	Total sowing area	Proportion of unsown arable land
1989	60.5	4.8	14.2	17.5	2.3	0.7	100.0	2.0
1990	59.8	4.1	12.8	19.0	2.5	1.8	100.0	1.4
1991	60.2	3.5	14.1	12.5	2.4	7.3	100.0	2.1
1992	60.7	3.9	14.0	16.1	1.9	3.4	100.0	7.0
1993	62.9	3.6	13.2	14.8	1.9	3.6	100.0	8.7
1994	64.6	2.7	13.4	14.1	2.2	3.0	100.0	5.0
1995	60.8	2.8	16.1	13.9	2.6	3.8	100.0	4.1
1996	62.6	2.5	15.8	9.2	2.4	7.5	100.0	4.6
1997	64.5	2.6	14.5	8.4	2.9	7.1	100.0	4.7
1998	64.4	3.0	12.9	8.4	2.5	8.8	100.0	4.5
1999	57.3	2.5	19.5	8.6	2.5	9.6	100.0	9.0
2000	70.5	1.9	13.2	6.9	2.2	5.3	100.0	8.2
2001	73.5	1.6	12.5	6.5	2.1	3.8	100.0	4.2

\* The proportion of land occupied by arable land crops.

The yield of individual arable land crop fluctuates year by year. Averages of several years somewhat balance these annual fluctuations and, consequently, give a better idea of long-term changes in proportions. For the last ten years, the increase in the sowing land of autumn wheat, maize and rape seed has been considerable. The sowing area of sugar beet, potato and papilionaceous fodder plants has decreased. Rape seed has shown a dynamic trend, while sufficient amounts of sugar beet have been produced on a smaller area of land. The sowing area of sunflower first increased, then dropped. There was no need to maintain previous levels of rough fodder plants, consequently, a much lower proportion has been harvested (see Table 11).

Table 11

*Volume indices of production of crops and horticultural products, 1989–2001*  
(Index: 1990 = 100.0)

Year	Cereals and pulses	Industrial crops	Rough and fermented	Vegetables	Fruits	Grapes
1989	125.8	110.0	114.1	95.8	112.1	72.2
1990	100.0	100.0	100.0	100.0	100.0	100.0
1991	122.8	119.1	100.5	100.5	93.4	82.9
1992	78.1	87.4	71.7	79.8	86.0	68.6
1993	67.7	71.7	65.2	75.2	89.8	66.4
1994	88.4	82.7	75.5	77.0	77.3	67.1
1995	88.3	99.7	79.0	86.9	54.3	59.2
1996	86.9	109.1	78.2	92.6	77.0	74.5
1997	105.0	81.5	75.1	92.9	66.5	81.8
1998	93.0	89.4	77.4	106.1	64.8	78.4
1999	81.1	109.0	76.7	115.6	67.5	62.3
2000	72.9	68.3	45.6	86.9	80.1	76.3
2001	108.4	87.3	53.8	102.6	72.9	125.3

Within the individual plant groups, the cultivation of grain crops, industrial plants and grapes has shown smaller decrease. The drop has been most significant in the cultivation of rough and green fodder plants. The dramatic situation characterising the production of rough and fermented fodder is due to a decrease in the number of animals. In most of the previous years, there was a 30-40 percent drop in the cultivation of grapes and fruits.

For the last ten years, the standard of plant cultivation has been at the mercy of various climate factors. The majority of average yields were around 50-80 percent of previous levels for most plants, although in some instances performances of over 100 percent of the previous levels have been achieved (see Table 12).

Table 12

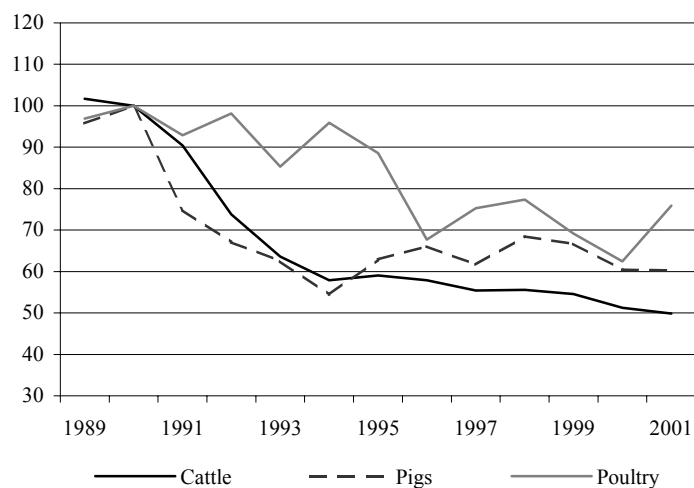
*Key figures for main plants on arable land, 1986-2001*

Plant	1986-1990	1991-1995	1996-2000	2001
	average			
	Harvested area (1000 hectares)			
Grain crops in total*	2 780	2 706	2 745	3 081
of which:				
wheat	1 272	1 030	1 076	1 206
maize	1 106	1 128	1 088	1 258
Sugar beet	118	118	84	66
Sunflower	367	423	432	320
Rape seed	..	39	106	110
Potato	45	54	56	36
Lucerne	301	269	214	155
	Harvested produce (1000 tons)			
Grain crops in total*	13 896	11 294	11 967	15 047
of which:				
wheat	6 214	4 394	4 079	5 196
maize	6 225	5 127	6 279	7 858
Sugar beet	4 513	3 709	3 328	2 903
Sunflower	745	743	681	632
Rape seed	..	64	173	205
Potato	791	1 108	1 132	908
Lucerne	1 574	1 275	1 085	843
	Average yield (kilogrammes/hectares)			
Wheat	4 880	4 250	3 790	4 310
Maize	5 630	4 410	5 670	6 220
Sugar beet	38 400	31 450	39 650	43 780
Sunflower	2 030	1 750	1 570	1 960
Rape seed	..	1 640	1 620	1 870
Potato	17 740	14 820	17 350	21 280
Lucerne	5 240	4 590	4 990	5 420

\* Until to 2001 without millet, buckwheat, broomcorn seed, rice.

In animal husbandry, the annual fluctuation of product volumes has been less than in the cultivation of plants, and has levelled out at about two thirds of the previous level. Changes in livestock have varied considerably by breed (see Figure 2).

Figure 2. Changes in livestock\*  
(Index: 1990=100.0)



\* December data.

The animal density projected to agricultural land has reduced by 46 percent, which is due to a considerable fall in the number of heavier animals (see Table 13).

Table 13

Volume indices of production of live animals and animal products, 1989–2001\*  
(Index: 1990=100.0)

Year	Cattle	Pigs	Sheep	Poultry	Other
1989	103.5	95.1	136.1	99.8	.
1990	100.0	100.0	100.0	100.0	100.0
1991	87.3	84.4	90.0	81.1	84.4
1992	82.1	64.7	73.2	76.1	90.8
1993	69.0	58.0	50.1	72.8	92.3
1994	64.3	51.2	41.2	77.0	95.6
1995	65.0	55.2	47.5	79.3	86.1
1996	64.0	61.3	38.5	77.1	84.6
1997	63.6	51.2	34.8	82.6	75.2
1998	66.6	54.5	38.2	88.5	79.6
1999	66.7	56.7	28.8	81.7	78.2
2000	67.3	55.5	35.8	91.0	80.4
2001	68.6	51.7	37.6	93.2	67.3

\* Including animal products.

The drop in the number of cattle, pigs and sheep has been balanced by poultry production, which has remained close to the previous level. The production of other breeds has decreased considerably, which can be explained by the changes in domestic con-

sumption and reduced exports. Due to its relatively lower price, poultry has increasingly replaced the consumption of the meat of larger animals.

For ten years, the number of animals within the various breeds not only decreased but sometimes widely fluctuated (see Table 14).

Table 14

*Number of livestock at end-of-year, 1989–2001\**  
(1000 animals)

Year	Cattle	Of which: cows	Horses	Pigs	Of which: brood sow	Sheep	Adult poultry**
1989	1 598	646	.	7 660	701	.	30 146
1990	1 571	630	76	8 000	624	1 865	31 121
1991	1 420	559	75	5 993	482	1 808	28 912
1992	1 159	497	75	5 364	467	1 752	30 535
1993	999	450	71	5 001	401	1 252	26 542
1994	910	415	78	4 356	335	947	29 847
1995	928	421	71	5 032	436	977	27 549
1996	909	414	70	5 289	379	872	21 062
1997	871	403	72	4 931	345	858	23 419
1998	873	407	73***	5 479	391	909	24 082
1999	857	399	74***	5 335	379	934	21 526
2000	805	380	75	4 834	348	1 129	19 422
2001	783	368	60	4 822	343	1 136	23 618

\* Since 1996, on December 1

\*\* Since 1997, without guinea-fowl (the 1996 livestock consisted of 135 thousand animals).

\*\*\* Estimation.

Table 15

*Livestock structure by species, 1989–2001*

Year	Cattle	Pigs	Horses	Sheep	Poultry	Number of notional animal unit per 100 hectares of agricultural land
	distribution of notional animal unit (percent)					
1989	49.7	34.0	2.3	5.8	8.2	39.6
1990	49.0	35.6	2.4	5.2	7.8	39.6
1991	52.5	31.6	2.8	6.0	7.1	33.5
1992	49.3	32.5	3.2	6.6	8.4	30.7
1993	48.4	34.5	3.4	5.4	8.3	26.9
1994	48.3	32.9	4.1	4.5	10.2	24.6
1995	46.8	36.2	3.6	4.4	9.0	25.7
1996	46.1	38.2	3.5	3.9	8.3	25.5
1997	45.8	37.0	3.8	4.0	9.4	24.5
1998	43.9	39.2	3.8	4.1	9.0	25.7
1999	44.4	39.4	3.9	4.3	8.0	25.0
2000	43.4	37.2	4.0	5.4	10.0	25.3
2001	42.4	37.2	3.2	5.5	11.7	25.2

In terms of the distribution of notional animal unit, the proportion of poultry stock has grown. Apart from a drop in the number of cattle, the proportion of other animals has

significantly not changed. The animal density index denoted in adult notional animal unit has fallen by 36 percent (see Table 15).

The production of key products of animal origin has followed the downward trend of livestock numbers, especially in the area of fish meat, wool and hens' egg production.

Table 16

*Production of key products of animal origin, 1989–2001*

Year	Animals for slaughter (1000 tons)	Meat (1000 tons)	Fish (tons)	Cow's milk (mil- lion litres)	Wool (tons)	Hens' egg (million pieces)
1989	2 260.0	1 308.2	27 300	2 779.0	8 764	4 576.0
1990	2 219.7	1 286.7	24 981	2 763.0	7 337	4 679.1
1991	1 975.7	1 132.7	19 932	2 417.6	4 218	4 443.3
1992	1 726.0	995.0	20 293	2 234.1	4 526	4 163.9
1993	1 512.6	874.9	16 923	2 019.5	4 092	4 210.8
1994	1 404.9	823.5	17 944	1 878.2	3 875	3 877.0
1995	1 402.0	833.3	16 342	1 919.6	3 274	3 466.5
1996	1 499.3	903.6	15 269	1 918.1	3 243	3 273.2
1997	1 394.3	855.1	16 370	1 931.3	2 959	3 387.9
1998	1 427.5	889.0	18 022	2 045.2	3 046	3 387.7
1999	1 442.9	879.8	19 052	2 044.5	3 387	3 189.8
2000	1 566.0	974.3	19 662	2 080.6	3 369	3 171.4
2001	1 452.6	.	18 150	2 079.7	3 917	3 276.9

The average yield per animal has generally improved due to the reduced number of animals, especially the production of milk per cow and the average egg yield per hen.

Table 17

*Key animal husbandry indicators, 1989–2001*

Year	Milk yield per cow (litre)	Wool yield per sheep (kilogramme)	Egg yield per hen (pieces)
1989	4 883	4,0	177
1990	4 935	3,5	186
1991	4 663	2,3	188
1992	4 737	2,5	189
1993	4 613	2,3	188
1994	4 660	3,1	191
1995	4 893	3,5	191
1996	4 846	3,3	199
1997	4 985	3,4	207
1998	5 362	3,6	203
1999	5 310	3,7	202
2000	5 335	3,6	217
2001	5 516	3,4	213

Between 1991 and 2000, the mechanical traction power of agriculture increased by 1.6 percent, following a temporary decrease. 60 percent of the traction power was pro-

vided by tractors. In the second half of the period, there was a considerable increase in the number and capacity of tractors. Other machine types have stayed on approximately the same level, while the number of lorries used in agriculture considerably dropped in 10 years (see Table 18).

Table 18

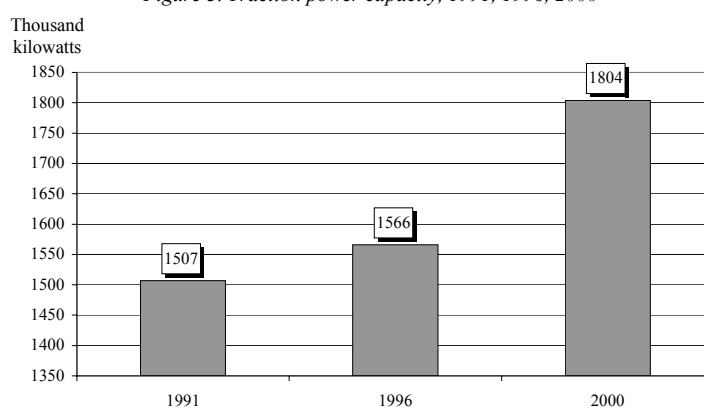
*The number and capacity of prime movers, 1991, 1996, 2000*

Year	Tractors	Combine harvesters	Other self propelled machines	Lorries	Other prime movers
Thousand pieces					
1991	92	11	.	41	.
1996	92	9	11	38	63
2000	113	12	13	26	11
Engine capacity (thousand kilowatts)					
1991	4 347	1 350	864	3 132	.
1996	4 867	1 150	723	2 692	255
2000	5 883	1 426	696	2 053	49

In 10 years, the mechanical traction power capacity per 1000 hectares of agricultural land has gradually expanded, due to an increase in mechanical capacity and a drop in the size of the cultivated area.

The average capacity of tractors remained practically unchanged in the three highlighted years (47, 53, 52 kilowatts). (See Figure 3.) The age of agricultural prime movers is high, on an average of 15 years, and they are mainly of Eastern European origin.

Figure 3. Traction power capacity, 1991, 1996, 2000



The number of agricultural buildings decreased further in the last ten years, due to a drop in yields and the number of animals. The capacity of cow-sheds and pig accommodation has decreased by 11 or rather 9 percent since 1996, while shelter for sheep and horses has grown. The usage of accommodation capacity has only slightly improved for most breeds, as the number of livestock within individual breeds has changed along a

similar pattern. The capacity of grain silos and other storage places decreased during the last few years. The area of land occupied by greenhouses and plastic covered greenhouses has significantly increased, which can be considered as one of the most significant achievements of the last decade. The utilisation of key fuels considerably dropped in the last decade.

The situation is very similar to the use of fertilisers. The effective agent content of artificial fertilisers used per unit of land has dropped to a fraction of previous levels, although there has been some improvement since 1998 (see Table 19).

Table 19

*Use of fertilisers, 1989–2001*

Year	Components in the active ingredients of fertilisers used				Kilogrammes of fertiliser per hectares*
	nitrogenous	phosphatic	potassic	total	
	1000 tons				
1989	582	265	374	1 221	231
1990	358	127	186	671	127
1991	140	23	33	196	37
1992	148	21	20	189	38
1993	161	25	21	207	41
1994	222	27	31	280	56
1995	191	29	27	247	49
1996	203	34	33	270	54
1997	206	42	37	285	57
1998	248	39	41	328	65
1999	262	39	45	346	69
2000	258	45	52	355	74
2001	275	58	62	395	82

\* For arable lands, garden, vineyard and orchard.

Table 20

*Foreign trade of foods, 1989–2001*  
(at current prices, HUF billion)

Year	Imports	Exports	Export surplus	Imports as percent of exports
1989	38	124	86	30.6
1990	41	139	98	29.5
1991	47	176	129	26.7
1992	48	184	136	26.1
1993	65	156	91	41.7
1994	97	209	112	46.4
1995	102	330	228	30.9
1996	124	365	241	34.0
1997	167	463	296	36.1
1998	200	520	320	38.5
1999	201	474	273	42.4
2000	248	551	303	45.0
2001	281	650	369	43.2



The decreasing trend of agricultural production value was primarily due to a drop in expenditures on new means of production, labour and other materials used for production. The production volume of Hungarian agriculture, which had dropped by its third, generally met the domestic consumption requirements. However, there were other two factors to consider: on the one hand, food exports continually decreased during the decade, and on the other hand there was more competition from several countries, which tried to reduce their superfluous food supplies by selling them on the Hungarian market or abroad, thus damaging Hungarian export potential. This is not entirely clear from the HUF value figures, but it may be more clearly signalled by the changes in ratios (see Table 20).

The privatisation of agricultural co-operatives and farms in the 1990s radically changed the production structure of agriculture, which considerably affected the productivity as well. During the period under review, Hungarian agricultural statisticians conducted a number of censuses and sample surveys, with findings evaluated in several reports and publications every year. However, the need has now emerged for a summary analysis of the trends of the last decade. This study is meant to fill in this gap, by presenting the trends of the period. It is expected to be beneficial for both those interested in agriculture and decision-makers.

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